REMARKS

The application has been reviewed in light of the Office Action dated January 3, 2005. Claims 21, 24, 27, 30, 33, 36, 39, 42 and 44-48 were pending, with claims 21, 44 and 47 being in independent form. Claims 1-20, 22, 23, 25, 26, 28, 29, 31, 32, 34, 35, 37, 38, 40, 41 and 43 were previously canceled, without disclaimer or prejudice. By this Amendment, Applicants have amended claims 21, 36, 39 and 42.

Claims 36, 39, 42, 47 and 48 were objected to as allegedly being a substantial duplicate of claims 24, 27, 30, 44 and 46.

By this Amendment, Applicants have amended claims 36, 39 and 42 to depend from claim 33.

With regard to claim 47 (and claim 48 which depends from claim 47), it is noted that claim 47 is directed to a phase-change optical recording medium comprising a recording layer which contains information regarding a P_t value recorded in advance therein, the P_t value corresponding to an optimum recording power, P_0. In contrast, claim 44 is directed to a phase-change optical recording medium comprising a recording layer which contains information recorded in advance therein corresponding to S and R values for selecting an optimum recording power.

Applicants maintain that claim 47 is not a substantial duplicate of claim 44 and claim 48 is not a substantial duplicate of claim 46.

Further, it is noted that since the Office Action does not indicate that any of the claims are allowable, the objection is premature.

Accordingly, withdrawal of the objection to the claims is requested.

Claims 21, 24, 27, 30, 33, 36, 39 and 42 were rejected under 35 U.S.C. §102(b) as

allegedly fully anticipated by European Patent Application No. EP 0 717 404 (hereinafter "Yamada '404"). Claims 21, 24, 27, 30, 33, 36, 39 and 42 were rejected under 35 U.S.C. §102(b) as allegedly fully anticipated by European Patent Application No. EP 0 735 158 (Ide et al.). Claims 21, 24, 27, 30, 33, 36, 39 and 42 were rejected under 35 U.S.C. §102(b) as allegedly fully anticipated by Japanese Patent Application No. JP 03-240590 (hereinafter "Iwasaki '590"). Claims 21, 24, 27, 30, 33, 36, 39 and 42 were rejected under 35 U.S.C. §102(b) as allegedly fully anticipated by Japanese Patent Application No. JP 04-078031 (hereinafter "Iwasaki '031"). Claims 21, 24, 27, 30, 33, 36, 39 and 42 were rejected under 35 U.S.C. §102(b) as allegedly anticipated by Japanese Patent Application No. JP 11-070737 (Yuzurihara et al.). Claims 21, 24, 27, 30, 33, 36, 39 and 42 were rejected under 35 U.S.C. §102(a) as allegedly anticipated by Japanese Patent Application No. JP 2002-002116 (hereinafter "Miura '116"). Claims 21, 24, 27, 30, 33, 36, 39 and 42 were rejected under 35 U.S.C. §102(e) as allegedly anticipated by U.S. Patent Application No. 6,479,121 to Miura et al. (hereinafter "Miura '121"). Claims 21, 24, 27, 30, 33, 36, 39 and 42 were rejected under 35 U.S.C. §102(b) as allegedly anticipated by European Patent Application No. EP 0847049 (hereinafter "Ohno '049"). Claims 21, 24, 27, 30, 33, 36, 39 and 42 were rejected under 35 U.S.C. §102(b) as allegedly fully anticipated by U.S. Patent Application No. 6,294,310 to Ohno et al. (hereinafter "Ohno '310"). Claims 21, 24, 27, 30, 33, 36, 39 and 42 were rejected under 35 U.S.C. §102(b) as allegedly anticipated by U.S. Patent Application No. 6,242,157 to Tominaga. Claims 21, 24, 27, 30, 33, 36, 39, 42 and 44-48 were rejected under 35 U.S.C. §103(a) as purportedly unpatentable over either one of Yamada, Ide, Iwasaki '590 or Yuzurihara, in view of U.S. Patent No. 6,609,175 to Ando et al. and either of European Patent Application No. EP 1111598 (hereinafter "Suzuki '598") or U.S. Patent No. 6,621,780 to Suzuki. (hereinafter "Suzuki '780").

Applicants have carefully considered the Examiner's comments and the cited art, and respectfully submit that independent claims 21, 44 and 47 are patentable over the cited art, for at least the following reasons.

This application is directed to rewritable optical recording media which are configured for repeated read/write/erase operations. A rewritable optical recording medium typically has a phase-change type recording layer which needs to be initialized before the optical recording medium can be used practically. The parameters of the initialization process have a substantial effect on the recording characteristics, such as overwrite capability, of the initialized medium.

Applicants found through substantial experimentation that improved recording characteristics can be attained if the energy density of the output laser power for the initialization process is no more than 1000 J/m^2. Independent claim 21 is directed to a rewritable phase-change optical recording medium which is initialized by irradiating the recording medium with a scanning beam spot emitted from a high power semiconductor laser device, wherein an energy density input by the beam spot is equal to, or less than, 1000 J/m^2.

In addition, recording power also affects write and readout characteristics of the phase-change optical recording medium. For example, when the laser power is too high during recording, damage results to the recording track. Applicants devised techniques which allow the optimum recording power to be selected for a phase-change optical recording medium. As mentioned above, independent claim 44 is directed to a phase-change optical recording medium comprising a recording layer which contains information recorded in advance therein corresponding to S and R values for selecting an optimum recording power. Independent claim 47 is directed to a phase-change optical recording medium comprising a recording layer which contains information regarding a P_t value recorded in advance therein, the P_t value corresponding

to an optimum recording power, P_0.

The cited art does not disclose or suggest the claimed invention.

Yamada '404, as understood by Applicants, is directed to a sputtering target for fabricating a recording layer of a phase-change type optical recording medium.

It is contended in the Office Action states that each of the media disclosed in Yamada '404 is initialized and the initialization is **equivalent**.

However, even assuming *arguendo* that the contention in the Office Action is true, Yamada '404 still does not render the claimed invention unpatentable under 35 U.S.C. §102 (or 35 U.S.C. §103). It is well-established that for a claim to be anticipated under 35 U.S.C. §102 by a prior art reference, the reference must disclose explicitly or inherently each and every element of the claim. Equivalence is not (and has never been) the test of anticipation under 35 U.S.C. §102 or the test of obviousness under 35 U.S.C. §103.

Here, Yamada '404 simply does not teach or suggest a rewritable phase-change optical recording medium initialized as described in amended claim 21.

Further, it is noted that initialization as described in claim 21 is a process to be applied and is not an inherent property of a medium of any particular composition. Thus, Applicants disagree that it is Applicants' burden to prove that the media disclosed by Yamada '404 have not been initialized as claimed. Either Yamada '404 discloses the initialized medium as claimed or it does not. If it is the Examiner's contention that Yamada '404 discloses the initialized medium as claimed, the Examiner is required under the relevant case law to pinpoint where such disclosure can be found in Yamada '404.

Ide, as understood by Applicants, is directed to a method for forming a recording layer of a phase-change type optical recording medium by using a sputtering target.

Iwasaki '590, as understood by Applicants, is directed to a data recording medium including a recording layer having as a main component thereof an alloy of a specific chalcopyrite compound and a specific element.

Iwasaki '031, as understood by Applicants, is directed to a recording layer for an information recording medium wherein the essential component of the recording layer is maintained in a mixed phase state.

Yuzurihara, as understood by Applicants, is directed to a recording layer of an optical recording medium including mainly Ag, In, Sb and Te as constituent elements.

Miura '116, as understood by Applicants, is directed to a phase-change type optical information recording medium having a recording layer with a quasi-stable Sb3Te phase which does not require initialization.

Miura '121, as understood by Applicants, is directed to a rewritable optical recording medium which does not require initialization.

The rejections based on Ide, Iwasaki '590, Iwasaki '031, Yuzurihara, Miura '116 and Miura '121, respectively, apparently are based on the disclosures in the references that the disclosed media are capable of repeated overwrite.

However, Applicants do not find teaching or suggestion in any of the references a rewritable phase-change optical recording medium initialized as described in amended claim 21. Disclosure of a capability of repeated overwrite of the media of the cited references does not disclose or suggest the claimed invention.

Ohno '049, as understood by Applicants, is directed to an optical information recording medium comprising a substrate provided with periodically wobbling guide grooves, a lower protective layer, a phase-change type recording layer, an upper protective layer and a reflective

layer, for recording, retrieving and erasing amorphous marks in the guide grooves.

Each of Examples 5 and 6 of Ohno '049 discloses melt initial crystallization using an elliptic beam with a laser power of 250 mW at a linear velocity of 4.5 m/s. Example 7 of Ohno '049 discloses melt initial crystallization using an elliptic beam with a laser power of 400 mW at a disk rotational speed of 2,700 rpm.

However, Ohno '049 does not disclose a rewritable phase-change optical recording medium which is initialized by irradiating the recording medium with a scanning beam spot emitted from a high power semiconductor laser device, wherein an energy density input by the beam spot is equal to, or less than, 1000 J/m^2, as described in claim 21.

It is contended in the Office Action that using the velocities and beam power as disclosed in Ohno '049 yields an energy density input of 960 J/m^2. No support or further explanation is provided in the Office Action for this contention. Applicants find no experimental data in Ohno '049 or even in this application that an energy density input of less than 1000 J/m^2 was applied in Examples 5-7 of Ohno '049. Fig. 5 of this application does not support the Examiner's contention.

Further, it is noted that Ohno '049 does not teach nor suggest (or otherwise communicate a recognition) that a lower energy density input (that is, equal to or less than 1000 J/m^2) is desirable.

Ohno '310, as understood by Applicants, is directed to an optical information recording medium having a multi-layer structure comprising a lower protective layer, a phase-change type optical recording layer, an upper protective layer and a reflective layer.

Example 5 of Ohno '310 discloses melt initialization using an elliptic irradiation beam with a laser power of 250 mW at a linear velocity of 4.5 m/s. Example 8 of Ohno '310 discloses

initialization crystallization using an elliptic beam with a laser power of 300 mW at a linear velocity of 4.5 m/s. Example 10 of Ohno '310 discloses melt initial crystallization using an elliptic irradiation beam with a laser power of 400 mW at a disk rotational speed of 2,700 rpm.

However, Ohno '310 does not disclose a rewritable phase-change optical recording medium which is initialized by irradiating the recording medium with a scanning beam spot emitted from a high power semiconductor laser device, wherein an energy density input by the beam spot is equal to, or less than, 1000 J/m^2, as described in claim 21.

It is contended in the Office Action that using the velocities and beam power as disclosed in Ohno '310 yields an energy density input of 534 J/m^2. No support or further explanation is provided in the Office Action for this contention. Applicants find no experimental data in Ohno '310 or even in this application that an energy density input of less than 1000 J/m^2 was applied in Examples 5, 8 and 10 of Ohno '310. Fig. 5 of this application does not support the Examiner's contention.

In addition, it is noted that Ohno '310 does not teach, suggest or otherwise communicate a recognition that a lower energy density input (that is, equal to or less than 1000 J/m^2) is desirable.

Tominaga, as understood by Applicants, is directed to a phase change optical recording medium comprising a recording layer consisting essentially of a Sb base thin film and a reactive thin film.

Example 1 of Tominaga discloses a sample 1B irradiated with a laser beam at a power of 8 mW and rotated at a linear velocity of 3 m/s.

However, Tominaga does not disclose a rewritable phase-change optical recording medium which is initialized by irradiating the recording medium with a scanning beam spot emitted from a high power semiconductor laser device, wherein an energy density input by the

beam spot is equal to, or less than, 1000 J/m^2, as described in claim 21.

It is contended in the Office Action that the irradiation of sample 1B in Example 1 of Tominaga would have been less than 1000 J/m^2. No support or further explanation is provided in the Office Action for this contention. Applicants find no experimental data in Tominaga or even in this application that an energy density input of less than 1000 J/m^2 was applied in Example 1. Fig. 5 of this application does not support the Examiner's contention.

Ando, as understood by Applicants, is directed to a method for recording information on an information storage medium by using (i) an application layer or a video recording layer, (ii) a layer for a file system, (iii) an optical disk drive layer or a physical layer. The application layer or video recording layer uses an AV address, the layer for the file system uses a logical sector number or logical block number, and the optical disk drive layer or physical layer uses a physical sector number, for controlling information recording.

Each of Suzuki '598 and Suzuki '780, as understood by Applicants, is directed to a method for determining an optimal recording power based on a relationship between modulation parameters and recording powers.

Applicants simply do not find teaching or suggestion in the cited art, however, of a rewritable phase-change optical recording medium which is initialized by irradiating the recording medium with a scanning beam spot emitted from a high power semiconductor laser device, wherein an energy density input by the beam spot is equal to, or less than, 1000 J/m^2, as provided by the claimed invention of independent claim 21.

In addition, Applicants find no teaching or suggestion in the cited art of a phase-change optical recording medium comprising a recording layer which contains information recorded in advance therein corresponding to S and R values for selecting an optimum recording power, as

described in independent claim 44, or a phase-change optical recording medium comprising a recording layer which contains information regarding a P_t value recorded in advance therein, the P_t value corresponding to an optimum recording power, P_0, as described in independent claim 47.

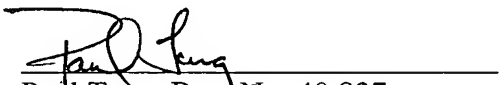
Accordingly, for at least the above-stated reasons, Applicants respectfully submit that the pending claims are patentable over the cited references.

If a petition for an extension of time is required to make this response timely, this paper should be considered to be such a petition. The Office is hereby authorized to charge any fees that may be required in connection with this amendment and to credit any overpayment to our Deposit Account No. 03-3125.

If a telephone interview could advance the prosecution of this application, the Examiner is respectfully requested to call the undersigned attorney.

Allowance of this application is respectfully requested.

Respectfully submitted,



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